SUMMARY

A calculation model using Excel® has been developed in order to be able to compare different production systems for pigs. The model can be found on the Internet at the following web address: [http://www.jbt.slu.se/jos.botermans/modell-gris.html](http://www.jbt.slu.se/jos.botermans/modell-gris.html) and is freely available. Using this model, the economic consequences of animal welfare measures can be calculated. In addition, the effect of different production systems can be tested, such as, farrowing pen systems, weaning systems, FTS pen systems, systems for organic production, etc. Even production systems from different countries can be compared. This model does not only take into consideration the extra costs (e.g., housing costs, labour costs), but also can take into consideration the effect of extra intake or savings in investment funding (as for example, feed, medicine, etc.). The economic results for a herd using the Swedish standard and the economic results from a herd with a different production system can therefore be calculated and compared. The user can change the parameters which he/she considers to be of importance for the different production system.

Three examples of how the model may be used are presented in this report. In the first example, production data taken from Jonasson & Andersson (1997) were used to determine if the extra costs incurred due to the implementation of the Swedish Animal Protection Regulations using our own model were of the same size as in their report. It was found that the extra costs were 0.40 SEK per kg meat in comparison to the 0.51 SEK reported by Jonasson & Andersson (1997). However, Jonasson & Andersson had calculated that there were antibiotics in the feed in the system according to the EU regulations, and antibiotic free feed in the system according to the Swedish regulations. However, the present report used the parameter antibiotic free for both systems. Therefore it can be concluded that the results according to the model tested were of the same size as that reported by Jonasson & Andersson (1997).

In the second example, a Danish and a Swedish pig production system were compared using the same feed prices, interest levels and labour costs per hour for both systems. However, the genetic material and production conditions (different ages at weaning, slaughter weights, etc.) differed between the two production systems. In this comparison the production costs in the Swedish system were 0.46 SEK higher per kg meat than that for the Danish system. It should be noted that consideration was not taken to the higher costs of establishment in Denmark due to the requirement for sufficient field area per animal. Comparisons 1 and 2 provided an indication of how much the Swedish Animal Protection Regulations increased production costs. The true answer probably would be between 0.40-0.50 SEK per kg meat and this was lower than that proposed by many other workers. However, this result was true for modern, newly built animal housing with good production and high work efficiency. If the user of the model considered that some data which has been entered is incorrect, he/she will be able to go into the program and adapt the parameter to the values which he/she considered to be suitable.

In the third example, a comparison between electronic sow feeding (ESF-system) and feeding sows in feeding stalls was made. The production data were obtained from Olsson & Svendsen (1997), and were based on studies carried out with “older
generation” electronic feeding stalls, housing the animals from weaning to farrowing. Besides the lower housing costs, using ESF also led to a lower intake due to fewer weaned pigs and higher special costs incurred for recruitment. Thus the production costs were 0.48 SEK per kg meat higher for the ESF system than for a system using feeding stalls for dry sows.